

WHAT IS CLAIMED IS:

1 1. A composite push rod comprising:

2 a hollow composite bar, a first end fitting bonded to a first end of said
3 composite bar, a second end fitting bonded to a second end of said
4 composite bar, both said first and second end fittings provided with a
5 rounded end; and

6 said second end fitting adjustable in length.

1 2. A composite push rod according to Claim 1 wherein said hollow
2 composite bar further comprises:

3 an inner portion of said bar constructed of multiple layers of sheets of
4 thermosetting, epoxy impregnated, longitudinally oriented fiber material,
5 and

6 an outer portion of said bar constructed of a single layer of a sheet of
7 thermosetting, epoxy impregnated, woven fiber material.

1 3. A composite push rod according to Claim 2 wherein the inner
2 portion of the bar consists of between 5 and 50 layers of sheets of
3 thermosetting, epoxy impregnated longitudinally oriented fiber material.

1 4. A composite push rod according to Claim 3 wherein the first and
2 second end fittings are each provided with a bore that extends through its
3 corresponding fitting, and the bores that are provided in the fittings are
4 continuous with an internal bore provided in the hollow bar so that there is
5 a continuous bore through the bar and its bonded end fittings.

1 5. A composite push rod according to Claim 1 further comprising:

2 the first and second ends of the composite bar each provided with a
3 beveled surface, a mating beveled surface provided on each of the first
4 and second end fittings, said

5 mating beveled surfaces provided on the end fittings where the fittings
6 bond to an end of the composite bar.

1 6. A composite push rod according to Claim 5 wherein the beveled
2 surface provided on each of the first and second ends forms an angle of
3 approximately 45 degrees with a longitudinal axis of the rod.

1 7. A composite push rod according to Claim 5 further comprising:

2 a tube provided on each end fitting where the fitting bonds to an end of the
3 composite bar so that the tube inserts into a bore provided in the bar when
4 the end fitting is bonded to its corresponding end of the bar.

1 8. A composite push rod according to Claim 5 wherein the first and
2 second end fittings are each provided with a bore that extend through the
3 fitting and the bores are continuous with an internal bore provided in the
4 hollow bar so that there is a continuous bore through the bar and its
5 bonded end fittings.

1 9. A composite push rod according to Claim 5 wherein said hollow
2 composite bar further comprises:

3 *an inner portion of said bar constructed of multiple layers of sheets of*
4 *thermosetting, epoxy impregnated, longitudinally oriented fiber material,*
5 *and*

6 *an outer portion of said bar constructed of a single layer of a sheet of*
7 *thermosetting, epoxy impregnated, woven fiber material.*

1 10. A composite push rod according to Claim 9 wherein the inner
2 portion of the bar consists of between 5 and 50 layers of sheets of
3 thermosetting, epoxy impregnated longitudinally oriented fiber material.

1 11. A composite push rod according to Claim 5 further comprising:

2 the first and second ends of the composite bar each provided with a flat
3 second surface that mates with a flat second mating surface provided on
4 each of the first and second end fittings, said

5 flat second mating surfaces provided on the end fittings where the fittings
6 bond to an end of the composite bar.

1 12. A composite push rod according to Claim 11 wherein the flat
2 second surface provided on each of the first and second ends of the
3 composite bar is approximately perpendicular to a longitudinal axis of the
4 bar.